

Amendment
U.S. Serial No. 10/603,572
Inventor: Jason DEAN
Filed: June 25, 2003
Attorney Docket No: 979-002CIP

PENDING CLAIMS

1. (Currently Amended) A programmable robotic apparatus, comprising:
 - a drive system comprising a plurality of independently operable treads;
 - a control module in electrical communication with said drive system, said control module configured to command the operation of each tread;
 - a memory module in electrical communication with said control module, said memory module configured to store and retrieve information;
 - an electronic compass module that responds only to magnetic fields, said electronic compass module in electrical communication with said control module, wherein said electronic compass module is configured to discern an orientation relative to the magnetic field of the planet Earth based on an analysis of at least one directional component of said magnetic field; and
 - an environmental signal detection module in electrical communication with said control module, wherein said environmental signal detection module is configured to detect an environmental signal of terrestrial origin that is provided for purposes of communication and to discern at least one of a location and an orientation of said programmable robotic apparatus.
2. (Original) The programmable robotic apparatus of Claim 1, wherein said apparatus is configured to operate autonomously based at least in part on information stored in said memory module.
3. (Original) The programmable robotic apparatus of Claim 1, further comprising a tool configured to perform a mechanical operation.
4. (Original) The programmable robotic apparatus of Claim 3, wherein said tool configured to perform a mechanical operation is selected from the group consisting of a cutting tool, a shoveling tool, and a vacuuming tool.

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5. (Original) The programmable robotic apparatus of Claim 3, wherein said programmable robotic apparatus is a programmable lawn mower.
6. (Original) The programmable robotic apparatus of Claim 1, wherein said memory module is selected from the group consisting of a magnetic tape, a floppy disc, a hard disc, a CD-ROM, a CD-RW disc, RAM, EPROM, EEPROM, and a flash memory.
7. (Previously Presented) The programmable robotic apparatus of Claim 1, wherein said environmental signal detection module is configured to discern at least one of a location and an orientation relative to at least one of a cellular telephone communication antenna, a radio broadcast antenna, and a television broadcast antenna.
8. (Original) The programmable robotic apparatus of Claim 1, further comprising a command receiver module in electrical communication with said control module.
9. (Original) The programmable robotic apparatus of Claim 8, wherein said command receiver module is configured to receive signals from a portable transmitter.
10. (Original) The programmable robotic apparatus of Claim 8, wherein said command receiver module is configured to receive signals comprising directives.

Claims 11-20 - Cancelled without prejudice.

21. (Previously Presented) The programmable robotic apparatus of Claim 1, further comprising at least one command recorded on a machine-readable medium, said at least one command representing an instruction for traversing an area of interest, said programmable robotic apparatus being adapted to autonomously traverse an area of interest by the performance of the steps of:

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operating said programmable robotic apparatus according to said at least one command recorded on said machine-readable medium;
discerning an orientation of said programmable robotic apparatus;
comparing said orientation of said programmable robotic apparatus to a direction recorded in said at least one command to determine an error signal; and
in the event that said error signal exceeds a predetermined value, commanding said programmable robotic apparatus to take a corrective action;
whereby said programmable robotic apparatus autonomously traverses said area of interest.

22. (Previously Presented) The programmable robotic apparatus of Claim 21, further adapted to performed iteratively during a period of operation of said programmable robotic apparatus the steps of discerning an orientation, comparing said orientation, and in the event that said error signal exceeds a predetermined value, commanding said programmable robotic apparatus to take a corrective action.

23. (Previously Presented) The programmable robotic apparatus of Claim 21, further adapted to perform an operation with a mechanical tool attached to said programmable robotic apparatus.

24. (Previously Presented) The programmable robotic apparatus of Claim 23, wherein said programmable robotic apparatus is configured to stand in one location during said operation with said mechanical tool.

25. (Previously Presented) The programmable robotic apparatus of Claim 1, configured to record at least one command on a machine-readable medium, the at least one command representing an instruction for traversing an area of interest, wherein the recording of said at least one command is accomplished by performing the steps of:

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operating said programmable robotic apparatus under external control, the
programmable robotic apparatus receiving directives from an external source
and traversing an area of interest;
taking readings from an environmental signal detection module of said
programmable robotic apparatus; and
recording said directives and readings on a machine-readable medium for later
recovery.

26. (Previously Presented) The programmable robotic apparatus of Claim 25, wherein
said directives are recorded in the format in which said directives are received.

27. (Previously Presented) The programmable robotic apparatus of Claim 25, wherein
said directives are recorded in a different format from the format in which said directives are
received.

28. (Previously Presented) The programmable robotic apparatus of Claim 1, further
comprising a computer program recorded on a machine-readable medium, said computer
program comprising:

a supervisory module that controls the autonomous operation of the programmable
robotic apparatus of Claim 1 and that, as required, receives information
recorded on a machine-readable medium;
an orientation receiver module that derives orientation information from an
environmental signal detection module of said programmable robotic
apparatus, and
a computation module that computes an error signal based at least in part on
orientation information derived from said environmental signal detection
module and information recorded on said machine-readable medium.

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29. (Previously Presented) The programmable robotic apparatus of Claim 28, further comprising:

an instruction receiver module that receives directives from an external source regarding operation of said programmable robotic apparatus.

30. (Previously Presented) The programmable robotic apparatus of Claim 28, further comprising:

an error correction module that, in the event that said error signal exceeds a predetermined value, computes an error correction to be provided as a corrective action command to said programmable robotic apparatus.